

REMARKS

Rejections Under 35 U.S.C. §112

The claims have been rejected under 35 U.S.C. §112 as being indefinite. Applicants urge that the claims, as currently amended, fully meet the requirements of 35 U.S.C. 1§12, second paragraph, and further urge that this rejection be withdrawn.

Applicants note that issued U.S. Patent No. 6,127,488 cited in the present specification at page 1, lines 12-13 recites language substantially similar to that of the currently amended claim 1. Specifically, claim 1 of U.S. 6,127,488 recites a rubber mixture with gel (A) having a particle size and swelling index, and a rubber (B) containing double bonds. By comparison, currently amended claim 1 recites a tire with a component having rubber comprised of a rubber gel (A) having a particle size and a swelling index, and a rubber (C) containing olefinic unsaturation.

Applicants further note that since the claims of U.S. 6,127,488 have been allowed, the language of claim 1 in U.S. 6,127,488 has been determined by at least two U.S. patent examiners to satisfy the requirements of 35 U.S.C. §112, second paragraph. Considering that the language of currently amended claim 1 regarding gel (A) and rubber (C) is substantially similar to that of allowed claim 1 of U.S. 6,127,488 regarding gel (A) and rubber (B), Applicants urge that currently amended claim 1 fully meets the requirements of 35 U.S.C. §112, second paragraph.

Claim 6 has been amended to depend from claim 5 to provide antecedent basis.

Rejections Under 35 U.S.C. §102(b)

Claims 1-4 and 8-18 have been rejected under 35 U.S.C. §102(b) as being anticipated by Muraoka et al., U.S. Patent No. 5,859,142 (Muraoka '142). This rejection is traversed. Applicants acknowledge that claims 5-7 are not rejected under section 102, and are, therefore, allowable upon withdrawal of the section 112 rejection.

Claim 1 as currently amended recites a tire having a component containing a rubber gel having a specific particle size and swelling index. Nowhere does Muraoka '142 disclose a rubber gel having a specific particle size and swelling index, nor a rubber containing such a gel. As Muraoka '142 fails to disclose such a tire, rubber, or rubber gel, Applicants urge that the claims as currently amended are not anticipated by Muraoka '142.

Muraoka '142 teaches a rubber composition comprising butadiene rubber with syndiotactic polybutadiene crystals, other diene rubber, carbon black, sulfur, and accelerator (column 2, lines 13-29). In contrast to claim 1, nowhere does Muraoka '142 disclose a rubber gel having a specific particle size and swelling index, nor a rubber containing such a gel. It is the

presence and effect of the particulate rubber gel in the rubber that distinguishes the present claims from Muraoka '142. The Examiner characterizes the cured rubber composition of Table 1 in Muraoka '142 as a gel and implies that the limitation "gel" in claim 1 therefor reads on Muraoka '142. Applicants urge that this is not the case. Regardless of whether the cured rubber composition of Muraoka '142 as a whole may or may not be referred to as a gel, Muraoka '142 clearly does not teach that the composition contains particulate rubber gel having a specific swelling index. Moreover, as evidenced by U.S. 6,127,488, incorporated by reference in the present specification, the particulate gels recited in the current claims are well known in the art and the meaning of the term "rubber gel" would be well understood by one skilled in the art upon reading the current specification. Applicants urge that for this reason, Muraoka '142 does not anticipate the claims.

The Examiner further characterizes the syndiotactic polybutadiene of Muraoka '142 as a gel. Again, based on the teaching of the current specification and the incorporated by reference U.S. Patent 6,127,488, one skilled in the art would appreciate that the term "rubber gel" does not include syndiotactic polybutadiene. As noted by the examiner, syndiotactic polybutadiene is crystalline and would therefor not have a swelling index, which is characteristic of amorphous and/or crosslinked polymers. Further, the teaching in Muraoka '142 as to particle size is specific to the syndiotactic polybutadiene disclosed therein. In the present claims, the particle size limitations are specific to the rubber gel, not the syndiotactic polybutadiene.

Applicants note that the present claims are fully patentable over the cited art, which neither anticipates nor makes obvious the present claims. The present specification includes evidence of surprising and unexpected results that further distinguish the present claims from the cited art.

With reference to the Example, it can be seen from Table 2 that the use of gels in combination with syndiotactic polybutadiene (SPBD, Examples D and E) is beneficial in regard to the overall stiffness/hysteresis balance, combining a low level in hysteresis (=dynamic loss modulus) with high dynamic stiffness (=dynamic storage modulus).

The gel/SPBD sample in Example D shows clear improvements in regard to dynamic loss modulus, elongation-at-break (23°C) and weight compared to the three control compounds (Examples A through C). A weight reduction is considered beneficial for lower rolling resistance and fuel consumption. Higher elongations-at-break indicate improved durability performance of the tire.

Combining gel/SPBD with silica (Example E) gives an additional significant improvement in modulus 100 (23°C and 100°C), dynamic storage and loss modulus and

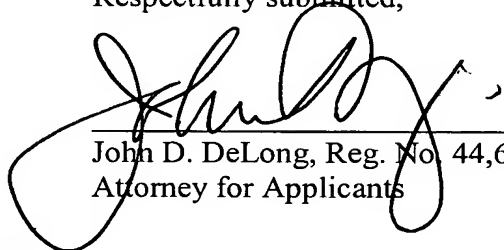
Tan.Delta. Low amplitudes in loss modulus and Tan.Delta are favorable because of reduced heat generation. The improvement in modulus 100 percent at 100°C is important for the tire application and is a consequence of the unique combination of the entropy elastic behavior of the gel with the hard and energy elastic properties of the SPBD. Rebound properties at 23°C are also improved, indicating improved wet skid resistance for a tire with a tread of such formulation.

Applicants urge that this showing of unexpected and surprising results is sufficient to overcome any prima facie obviousness or anticipation.

Conclusion

It is believed that all of the claims now pending in the subject patent application are allowable, and that it is now appropriate to allow the subject patent application. Such an allowance is accordingly respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'John D. DeLong', is written over a horizontal line.

John D. DeLong, Reg. No. 44,648
Attorney for Applicants

The Goodyear Tire & Rubber Company
Intellectual Property Law Dept. 823
1144 East Market Street
Akron, Ohio 44316-0001
Telephone: (330) 796-8757
JDD/jsk